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ABSTRACT:

PURPOSE: To improve detection limit and sensitivity and to enable detection of both positive and negative ions with the same gain by disposing a meshed electrode between an ion-electron converter and scintillator and forming a curved shape to focus secondary electrons to a scintillator surface by using the surface of the meshed electrode and the surface of the scintillator.

detect positive & negative ions, meshed electrode

focus electron

CONSTITUTION: The surfaces of the meshed electrode 2 and the scintillator 4 are shaped to the spherical surface having the same center so as to focus the secondary electrons generated by the ion-electron converter 1 onto an aluminum film 3. Ions 9 past a mass spectrometer 8 are converted to the secondary electrons 7 by the ion-electron converter 1 and are passed through the meshed electrode 2; thereafter, the ions arrive at the scintillator 4, by which the ions are converted to light. The light is amplified by a photomultiplier 5 and is detected. The value which is nearly 100% is obtainable for the count efficiency of the ions to be detected in the case of using a pulse counting system to count the number of pulses by converting the output of the photomultiplier 5 to voltage pulses. The

focus secondary electrons

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detection limit of the detector is
thereby improved to a greater extent.

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PATENT ABSTRACTS OF JAPAN

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(71)Applicant : HITACHI LTD

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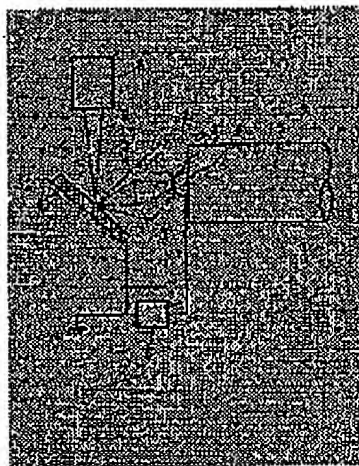
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TAMURA HIFUMI

(54) ION DETECTOR

(57)Abstract:

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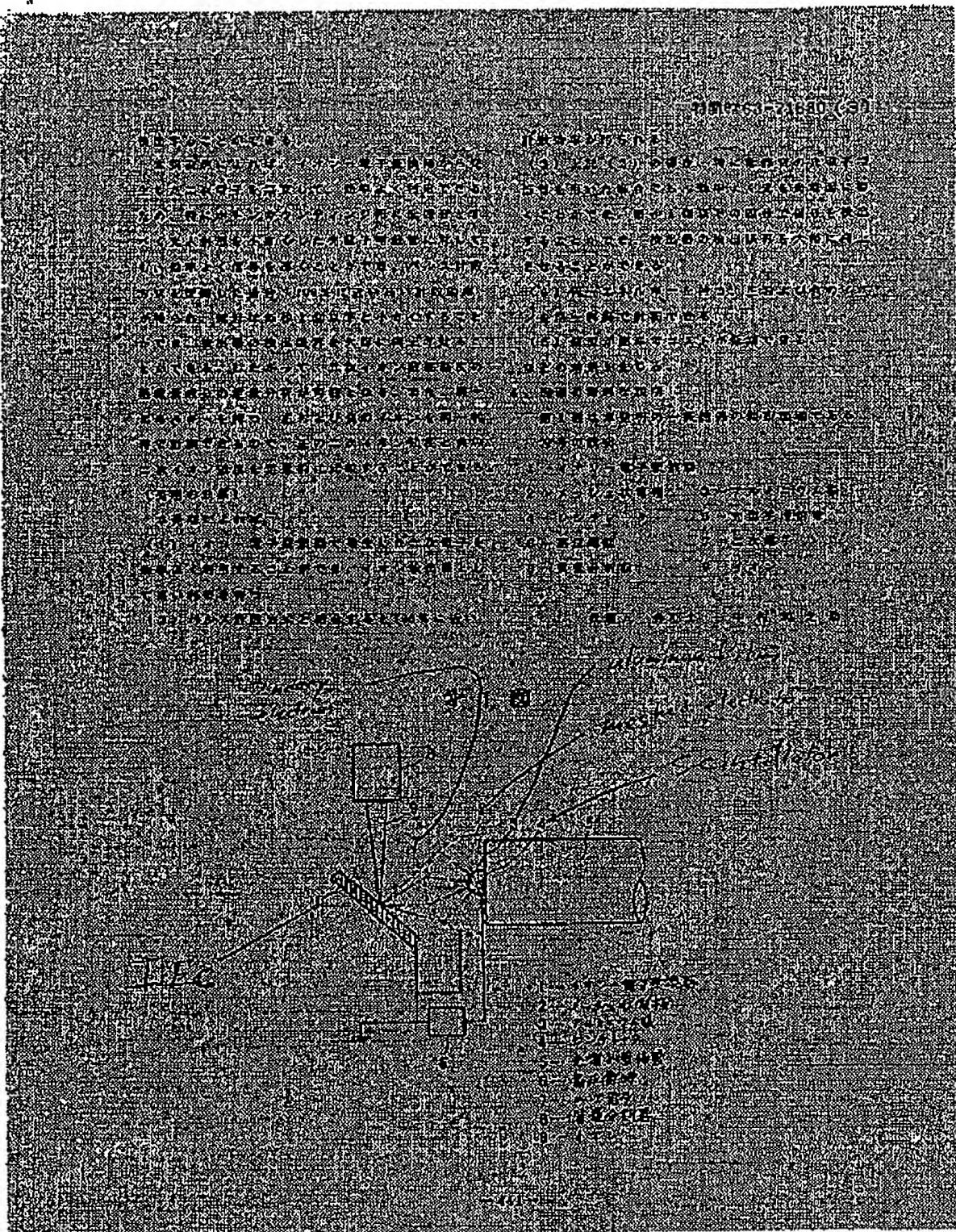
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